

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An external cavity type semiconductor laser, comprising:

a ~~semiconductor laser device~~ laser diode having a plurality of layers including an activation layer;

a window glass disposed opposite to a beam emission surface of the ~~semiconductor laser device~~ laser diode;

a grating that receives a beam emitted from the ~~semiconductor laser device~~ laser diode through the window glass and returns a beam having a predetermined wavelength to the ~~semiconductor laser device~~ laser diode; and

a lens disposed between the ~~semiconductor laser device~~ laser diode and the grating and which collects the beam emitted from the ~~semiconductor laser device~~ laser diode,

wherein the window glass is arranged in a first state or a second state,

wherein in the first state the window glass is nearly in parallel with a first axis and is not in parallel with a second axis,

wherein in the second state the window glass is not in parallel with the first axis, the window glass being nearly in parallel with the second axis, ~~and~~

wherein the first axis is nearly perpendicular to a surface that is in parallel with at least one of the boundary surfaces of the activation layer and other layers of the ~~semiconductor laser device~~ laser diode, and the second axis is nearly in parallel with the beam emission surface of the ~~semiconductor laser device~~ laser diode and nearly perpendicular to the first axis, and

wherein a reflectance of a beam emission surface of the laser diode is 3% or less for light received from outside the laser diode.

2. (Original) The external cavity type semiconductor laser as set forth in claim 1,

wherein the window glass is arranged in the first state, and

wherein an angle between a surface of the window glass and the second axis is in the range from 5° to 12°.

3. (Original) The external cavity type semiconductor laser as set forth in claim 1,

wherein the window glass is arranged in the second state, and

wherein the angle between the surface of the window glass and the first axis is in the range from 1° to 1.6°.

4. (Currently Amended) The external cavity type semiconductor laser as set forth in claim 1,

wherein the ~~semiconductor laser device~~ laser diode and the grating are arranged so that the ~~semiconductor laser device~~ laser diode supplies an S wave to the grating.

5. (Currently Amended) The external cavity type semiconductor laser as set forth in claim 1,

wherein the ~~semiconductor laser device~~ laser diode has an output power of at least 45 mW,
and

wherein when the ~~semiconductor laser device~~ laser diode emits a beam with an output power of 45 mW or less, a kink does not occur.

6. (Currently Amended) The external cavity type semiconductor laser as set forth in claim 5,

~~wherein the semiconductor laser device is a laser diode,~~

wherein side surfaces of a ridge of the laser diode are buried with two layers of an insulation film to suppress the kink and a stripe width W is 1.6 μm or less.

7. (Cancelled)

8. (Original) The external cavity type semiconductor laser as set forth in claim 1,
wherein a numerical aperture of the lens is in the range from 0.3 to 0.7.

9. (Original) The external cavity type semiconductor laser as set forth in claim 1,
wherein an external cavity length is in the range from 10 mm to 30 mm.

10. (Original) The external cavity type semiconductor laser as set forth in claim 9,
wherein the external cavity length is in the range from 10 mm to 20 mm.

11. (Original) The external cavity type semiconductor laser as set forth in claim 1,
wherein a reflectance of a first order diffracted beam of the grating is in the range from 10%
to 30%.

12. (Currently Amended) The external cavity type semiconductor laser as set forth in claim
1,
wherein the ~~semiconductor laser device~~ laser diode is a blue laser diode.

13. (Currently Amended) An external cavity type semiconductor laser, comprising:
a laser diode having a plurality of layers including an activation layer;
a window glass disposed opposite to a beam emission surface of the laser diode;

a grating that receives a beam emitted from the laser diode through the window glass and returns a beam having a predetermined wavelength to the laser diode; and

a lens disposed between the laser diode and the grating and collects the beam emitted from the laser diode,

wherein the window glass is arranged in a first state or a second state,

wherein in the first state the window glass is nearly in parallel with a first axis and is not in parallel with a second axis,

wherein in the second state the window glass is not in parallel with the first axis, the window glass being nearly in parallel with the second axis,

wherein the first axis is nearly perpendicular to a surface that is in parallel with at least one of the boundary surfaces of the activation layer and other layers of the ~~semiconductor laser device~~ laser diode, and the second axis is nearly in parallel with the beam emission surface of the ~~semiconductor laser device~~ laser diode and nearly perpendicular to the first axis,

wherein the laser diode and the grating are arranged so that the laser diode supplies an S wave to the grating,

wherein the laser diode has an output power of at least 45 mW,

wherein when the laser diode emits a beam with an output power of 45 mW or less, a kink does not occur,

wherein a reflectance of a beam emission surface of the laser diode is 3% or less,

wherein a numerical aperture of the lens is in the range from 0.3 to 0.7,

wherein an external cavity length is in the range from 10 mm to 30 mm, and

wherein a reflectance of a first order diffracted beam of the grating is in the range from 10 % to 30%.,

14. (Original) The external cavity type semiconductor laser as set forth in claim 13,

wherein the laser diode is a blue laser diode.

15. (Original) The external cavity type semiconductor laser as set forth in claim 13,
wherein the window glass is arranged in the first state, and
wherein an angle between a surface of the window glass and the second axis is in the range
from 5° to 12°.

16. (Original) The external cavity type semiconductor laser as set forth in claim 13,
wherein the window glass is arranged in the second state, and
wherein the angle between the surface of the window glass and the first axis is in the range
from 1° to 1.6°.

17. (Original) The external cavity type semiconductor laser as set forth in claim 13,
wherein side surfaces of a ridge of the laser diode are buried with two layers of an insulation
film to suppress the kink and a stripe width W is 1.6 μm or less.

18. (Original) The external cavity type semiconductor laser as set forth in claim 13,
wherein the external cavity length is in the range from 10 mm to 20 mm.